

What is claimed is:

1. A method of manufacturing a liquid crystal display device, comprising:  
a first photolithography process forming a gate electrode on a substrate;  
a second photolithography process including:
  - a) depositing sequentially a gate insulating layer, a semiconductor layer, and a metal layer;
  - b) applying a first photoresist on the metal layer;
  - c) aligning a first photo mask with the substrate;
  - d) light exposing and developing the first photoresist to produce a first photoresist pattern;
  - e) etching the metal layer using a first etchant, the first etchant ashing the first photoresist pattern on a ~~predetermined~~ portion of the metal layer to produce a second photoresist pattern, thereby exposing the ~~predetermined~~ portion of the metal layer; and
  - f) etching the gate insulating layer, the semiconductor layer, and the ~~predetermined~~ portion of the metal layer using a second etchant according to the second photoresist pattern to form source and drain electrodes, an ohmic contact layer, and an active area;a third photolithography process forming a passivation film and a contact hole; and  
a fourth photolithography process forming a pixel electrode connecting with the drain electrode through the contact hole.
2. The method of claim 1, wherein the first etchant includes  $\text{Cl}_2/\text{O}_2$  gas.
3. The method of claim 2, wherein the second etchant includes  $\text{SF}_6/\text{HCl}$  gas.

4. The method of claim 2, wherein the second etchant includes  $\text{SF}_6/\text{H}_2/\text{Cl}_2$  gas.
5. The method of claim 1, wherein the semiconductor layer includes first and second semiconductor layers.
6. The method of claim 5, wherein the first semiconductor layer includes amorphous silicon.
7. The method of claim 5, wherein the second semiconductor layer includes doped amorphous silicon.
8. The method of claim 1, wherein the source and drain electrodes are made of a metal selected from a group consisting of Cr, Mo, Al, and Al alloy.
9. The method of claim 8, wherein the semiconductor layer includes first and second semiconductor layers.
10. The method of claim 9, wherein the first semiconductor layer includes amorphous silicon.
11. The method of claim 9, wherein the second semiconductor layer includes doped amorphous silicon.
12. The method of claim 1, wherein the pixel electrode includes indium tin oxide.

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